EXTREMELY LONG WIRE FASTENERS FOR USE IN MINIMALLY INVASIVE SURGERY AND MEANS AND METHODS FOR HANDLING THOSE FASTENERS

ABSTRACT

Wire fasteners having legs with lengths that can be one hundred times the width of the fastener are used to secure items, such as prosthesis valves to a patient during minimally invasive surgery. The fasteners are manipulated into position and then are immobilized by means of the legs thereof for tensioning, cutting and forming in situ. The fasteners are manipulated, tensioned and formed from the leg end of the fasteners. Tools for initially placing the fasteners and for immobilizing, tensioning, cutting and bending the fastener legs are disclosed. Once the fasteners are initially placed, the prosthesis is placed on the long legs of the placed fasteners and is guided into position on the legs. Once the prosthesis is in position, the legs of the fasteners are immobilized, tensioned, cut and bent into staple-like shapes to secure the prosthesis to the patient. A method for carrying out the procedure using the long fastener is also disclosed. Using the teaching of the present disclosure, a surgeon can customize a fastener to the particular surgery or even to the particular portion of surgery being performed during the surgery.